D. Contributions of Previous Archaeological Research on Farmsteads, 1830-1940

Settlement Pattern Studies

For the cultural resources planning study of the proposed Route 13 Relief Route study area (Figure 3), archaeologists created a data base that included: 1) all standing buildings in the project area listed in the then Bureau of Archaeology and Historic Preservation inventory files, and 2) historical archaeological sites within the proposed project area, identified by consulting nineteenth-century atlases and maps. The standing buildings data base included the building's date of original construction (as closely as could be determined) and the nature of potential associated archaeological resources based on the building's function. Functional types used to categorize these archaeological resources included estates, agricultural tenant dwelling/farm, agricultural complex, agricultural outbuilding, agricultural/mill complex, plantation, peach orchard, and migrant worker house. For the potential archaeological sites identified through map research, earliest documented use and function as suggested by the documentary evidence and site setting were among the recorded variables (Custer et al. 1984: 18-19, 22-24). A total of 467 agricultural properties occupied between 1830 and 1940 with potential archaeological resources were identified in the portions of Pencader, New Castle, Red Lion, St. Georges, Appoquinimink, Blackbird, Kenton, Duck Creek, Little Creek, West Dover, East Dover, and North Murderkill Hundreds lying in the project study area (Custer et al. 1984: Appendix II).

Analysis of the distribution of these and all other identified historical archaeological sites resulted in defining zones with a high probability for containing concentrations of post-1802 sites (for which the most complete information was available). The study concluded, regarding nineteenth and first half of the twentieth-century agricultural complexes and tenancies:

> Choices in settlement location were no longer constrained by water accessibility and major settlement expansion was felt in the upland zones between watersheds, especially on the high, well-drained soils along the drainage divide separating the Chesapeake Bay and Delaware River-Delaware Bay watersheds... New roads linked the older transportation system and the newly established canal and railroad routes. The construction of the railroad and the canal, however, was not the only factor in settlement expansion. Increasing population pressure in settled areas and the growing demand of the interregional markets for agricultural products made the construction of the new transportation routes economically feasible...

> ...An extensive network of roads was established in the newly settled agricultural hinterland and these roads linked farmsteads and agricultural hamlets to the redistribution centers and to the canal, rail lines, and streams...
>
> The substantial number of agricultural tenant dwellings and farms in the region indicates the presence of a large body of landless agricultural laborers. The distributional pattern of agricultural tenant-related structures in rural areas indicated the majority were situated close to the roadways...(Custer et al. 1984: 109-112).

Following up on the initial Reconnaissance Planning Study, three smaller study areas in St. Georges, Appoquinimink, and Blackbird Hundreds were selected for additional archival research as well as field reconnaissance. Detailed analysis of historical archaeological site distributions utilized the data base of 144 sites identified in these study areas. Soil setting, surface water setting, and transportation access were crosstabulated with each site's date and function (Custer and Bachman 1986: 154-191). Because the analysis showed clear relationships between these variables and site location, comparable data were gathered on all 1,859 historic site locations within the proposed Route 13 Relief Route corridor (Custer and Grettler 1991). These sites included 185 agricultural complexes occupied originally between 1820 and 1850, 427 occupied originally between 1850 and 1880, and 114 occupied originally between 1880 and 1940. In addition, for the same three time periods respectively, 44, 296, and 38 agricultural tenant complexes were included (Custer and Grettler 1991: 7). Together these sites account for 60% of the data base. For this second study, the factors considered were "soil quality, access to markets via transportation networks, and immigrant's time of arrival. Consideration of time of arrival will also account for availability of land, for availability should obviously decrease through time" (Custer and Grettler 1991: 4).

High quality soils for raising grain crops, for grazing, for woodlots, and for hunting (using USDA wildlife capability measures) were recorded in 100, 200, and 300 acre catchments around each site. Statistical analysis revealed that the agricultural sites tended to be located on the soils highest in productivity for raising grains, grazing, and woodlots (Custer and Grettler 1991: 14). Furthermore, in New Castle County, "for owner-occupied sites, maximization of high productivity agricultural soils and woodlot soils within a 100-acre catchment is an important site selection factor. For tenant agricultural sites, maximization of well drained soils of all types within all size catchments is a critical site selection factor" (Custer and Grettler 1991: 32). In Kent County, tenant agricultural sites showed "no maximization of access to high quality soils in any size catchment" (Custer and Grettler

1991: 32). Analyzing settlement trends over time revealed that "tenant sites tended to be located on more productive soils during the post-1880 time period" (Custer and Grettler 1991: 33).

Four types of water setting were recorded: flowing stream, ephemeral stream, bay/basin, and bay/basin/stream confluences. For all but 3% of the sites, a flowing stream constituted the closest surface water. Almost one-third of the sites were located within 300 feet of a stream, and more than one-half within 900 feet (Custer and Grettler 1991: 38-9). "During the 1820-1850 period, sites are furthest from surface water and the most varied in their locations with respect to distance from water.... [A]fter 1850, site locations show lesser variability with respect to surface water and...are significantly closer to water than sites dating to 1820-1850" (Custer and Grettler 1991: 41).

"Access to water transportation was measured for sites in the study area in two ways. The straightline distance from site locations to the nearest navigable water was measured along with the distance to local historically documented landing sites... Distance to major crossroads and transshipment points was also measured... Access to rail transportation for post-1850 sites was measured by recording the distance to the nearest railroad depot" (Custer and Grettler 1991: 49-50). Post-1820 sites lay a mean of 1.25 miles from, and at considerably varied distances from water transportation (Custer and Grettler 1991: 50). Distance of sites to crossroads varied both among site types and over time. Owner-occupied farms originally established between 1820 and 1850 lay furthest from crossroads, while those established after 1850 lay furthest from railroad depots (Custer and Grettler 1991: 68, 71).

A nearest-neighbor analysis measured the mean distance to the nearest neighboring residence, farm, commercial, or public building, and compared this to the expected distance given a random distribution. Random distributions of sites appear prior to 1880; after this date, the sites "show a distribution more characteristic of regularly spaced locations" (Custer and Grettler 1991: 75, 80).

As the authors recognize, these conclusions, though important, have been based on a limited and biased data base, and were drawn without considering several potentially significant variables. Immigrant's time of arrival was not actually addressed; instead the date of the farm's, residence's, or commercial operation's establishment was used, and often only an approximation of this date was available. Considering distance to the nearest social center and source of goods and services (e.g., village or town) may have furthered our understanding of settlement decisions, as would considering the land distribution system, residents' ethnicity, and kinship networks. Admittedly, these factors do not lend themselves easily to the type of analysis undertaken in this study, yet they nevertheless may have contributed significantly to the settlement choices individuals made, and thus the settlement patterning

visible on the landscape. Nevertheless, Custer and Grettler's study is an important step enroute to understanding the factors and processes that have influenced the creation and evolution of Delaware's cultural landscape.

Archaeological Studies of Individual Farms and Agricultural Tenancies

Eleven intensive archaeological studies of farms and agricultural tenancies in New Castle and Kent counties occupied between 1830 and 1940 have been reported (Figure 42). The contributions each have made to developing an historic context on Agriculture and Farm Life are discussed in the following sections.

H. Grant Tenancy, Mill Creek Hundred, New Castle County

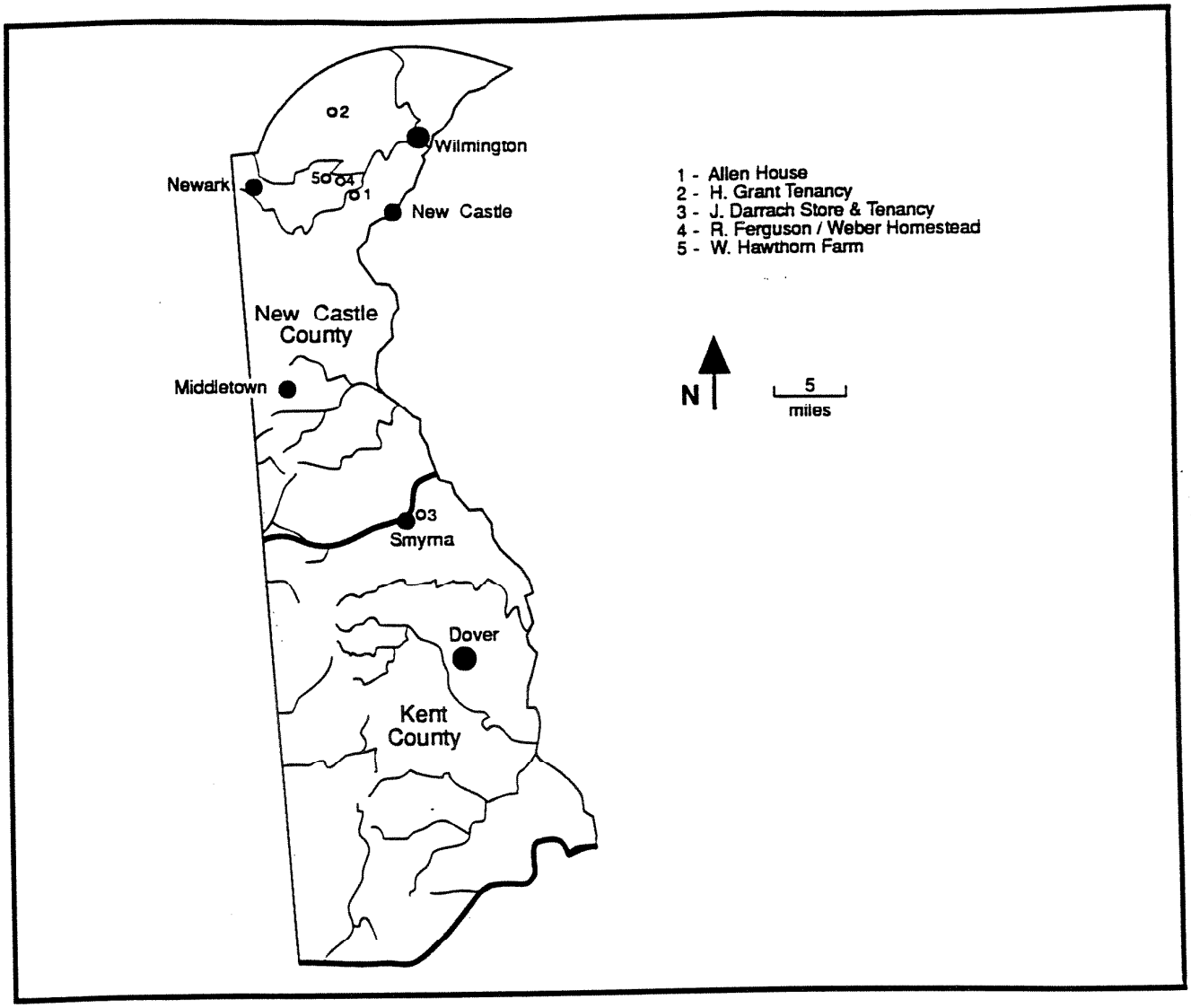
H. Grant appeared as the owner of this property along Lancaster Pike in Mill Creek Hundred on the 1860 Lake and Beers map. The owner of several properties in the vicinity, Grant did not live on the study property, but instead rented it to agricultural tenants. Subsequent owners similarly rented the property. Considerable documentary research failed to identify any of these tenant families (Taylor et al. 1987: 129-130). Deed research did reveal, however, that the house had been built on a 70 perch tract originally separated from a larger farm in 1839 (Taylor et al. 1987: 32). Thus the property apparently represents a tenant "house and garden" (Siders et al. 1991).

Excavations at the site revealed a stone house foundation and a partial cellar, a well, and one or two subsidiary structures. This low number of agricultural outbuildings is consistent with a tenancy located adjoining the main working farm, which would have housed the necessary agricultural buildings. The majority of the material culture recovered from the site concentrated in refuse deposits just outside the tenant house's entryways. Neither temporal nor functional separation of these refuse deposits were discernible (Taylor et al 1987: 130, 133). "The ceramics from the site primarily consisted of pearlware with various decorative methods including transfer printing, hand painting, shell edge and finger painting. Of the decorated pearlware sherds, transfer printing was the most common. Lesser amounts of whiteware and creamware were found. Glass artifacts were relatively sparse and tended to be undiagnostic...[M]etal artifacts found included coins, can fragments, [nails], and various miscellaneous hardware and tool fragments" (Taylor et al. 1987: 130).

Like the Robert Ferguson tenancy (Coleman et al. 1983) and the William Hawthorn farm (Coleman et al. 1984) sites, cow, pig, and sheep constituted the major domestic food resources at the Grant tenancy. Unlike these other sites, however, chickens and nondomesticated species such as rabbit, box turtle, oysters, and clams were also eaten by the tenant families. Also in contrast to

FIGURE 42

MAP OF NEW CASTLE AND KENT COUNTIES, WITH DRAINAGES, MAJOR TOWNS, AND SITE LOCATIONS



the other sites, the meat cuts from the domestic species were relatively expensive (Taylor et al 1987: 131-132). Miller analysis of the ceramic assemblage provided further support that the site's tenant families could afford to invest in comparatively expensive ceramics on which to serve and from which to eat their "relatively expensive" meats (Taylor et al. 1987: 134).

Allen House, outskirts of Christiana, New Castle Hundred, New Castle County

Sometime around 1830 Charles Allen constructed a new house just south of the Christina River along the east side of present-day Route 7, on the outskirts of Christiana. It replaced a small eighteenth-century tenant house, partially incorporating the earlier house's foundations. The project area, part of the South Christina Relief Route, only contained an addition (possibly a kitchen), a 'workhouse', and a small shed or crib surrounding a cobblestone courtyard with a centrally placed well associated with Allen's new house. The main portion of the house lay outside the project area (Basalik, Brown, and Tabachnik 1987: 108-109).

Charles Allen was born in 1775, probably in Red Lion Hundred. In 1804 he bought the property along the "Great Road" (present-day Route 7), and moved there by 1809. By the 1810s, Allen and his family engaged in a series of diverse activities--operating a tavern, carpentry work, blacksmithing, and probably also farming. When Allen died in 1842, his estate, valued in the upper 20% of the hundred's taxables, included considerable farming equipment and other agricultural goods. Charles' son George, a farmer, became head of household on his father's death. Over the next 30 years, the agricultural census recorded the family produced wheat, corn, oats, potatoes, and hay, and raised livestock, especially cows and pigs. Perhaps through applying the advice of the 'scientific' agricultural reformers, Allen's annual yields, in total and per acre, increased continually across the period. African American tenants occupied houses on Allen's now extensive farmholdings throughout the second half of the century. Significantly, the family did not follow what researchers have documented as the trend toward increasingly specialized farm production in the second half of the century, away from cereals toward truck products and dairying. The property finally left the Allen family in the 1890s. Subsequent owners rented it to farm tenants (Basalik, Brown, and Tabachnik 1987: 40-47).

Archaeological excavations revealed evidence of the Allen outbuildings' architecture. The kitchen sat on uncoursed mortared fieldstone foundations, and measured 12.5' by 10.5'. A massive chimney base occupied one gable end of the building. Two other outbuildings (a workhouse and shed or crib), both set on less substantial foundations, were of indeterminate dimensions. A stone wall defined the boundary of the rear yard.

The excavations produced little material culture associated with the Allen family's residence in their new (ca. 1830) house. Deposits overlying the cobble courtyard and in the vicinity of the outbuildings contained very fragmentary ceramic sherds, for example. These assemblages consisted of about 40% redware sherds, 20% whiteware sherds, 20% pearlware sherds, 10% creamware sherds, and smaller quantities of other types. The fragmentary condition prevented vessel reconstruction, and thus these collections are of limited interpretive value. Similarly, faunal remains associated with post-1830 deposits were small in number and size, and did not produce significant information on the family's foodways. Glass bottles, in comparison, were most numerous in these same later nineteenth-century deposits. Of the 104 bottles identified, 47% contained beverages, 26% foodstuffs, and 21% medicines.

Whitten Road Farm, near Christiana, New Castle County

Established in 1732 by the Stewart family, this farm complex along the Christina River west of Christiana became a tenancy soon after 1807. In that year, the family moved into a new brick house nearby and sold the old complex along with a 20 acre smallholding. From 1815 until its demolition ca. 1853, the eighteenth-century farm complex housed a series of tenants who "provided the seasonal labor demanded by the aggressively commercial wheat agriculture practiced by the [larger farm's owners]" (Shaffer et al. 1988: 261). Throughout the eighteenth and nineteenth centuries, the complex consisted of only three structures arranged in a "hollow square" fashion. All had been constructed of posts set directly into postholes or on blocks. The house measured 24' by 24' (built in a series of separate sections over time), the stable 10' by 20', and the English-style barn 10' by 28' (Shaffer et al. 1988: 252-259). The 20 acre tenancy "was partly fenced and contained by 1851, several small orchards and a dug well" (Shaffer et al. 1988: 261).

Analysis of the artifacts distributed throughout the plowzone revealed concentrations of ceramics and other household remains near the house's southeastern and southwestern corners, and not in the vicinity of the two farm outbuildings. High phosphate levels in the yard between the stable and barn support the interpretation of their function, and suggest this yard served as a barnyard for the animals. Postholes further suggest this yard was fenced, at least during a portion of the farm's history (Shaffer et al. 1988: 255, 257).

Study of the material culture from the excavations focused on the ceramics, especially those dating from the eighteenth and early nineteenth centuries, significantly the most numerous. Throughout the farm's life, however, perhaps English and certainly locally made red earthenwares formed the bulk of the farmers' ceramic

wares. About one-third of these were slip-decorated plates and dishes. Utilitarian bowls, pots, pans, and jugs composed most of the remainder (Shaffer et al 1988: 258).

Refuse disposal also appeared fairly consistent throughout the eighteenth and nineteenth centuries. Most refuse was casually discarded into the yard around the house (Shaffer et al. 1988: 259). In particular, the Stewarts and the later tenants used the area south of the house, between it and the fenced barnyard, for refuse disposal. Except for organic wastes apparently disposed of in the barnyard, it and the area north of the fenceline bordering the house remained relatively free of household refuse (Shaffer et al. 1988: 112).

William M. Hawthorn Farm, Christiana, New Castle County

At least by 1816, William Hawthorn's 111 acre farm in White Clay Creek Hundred contained a log dwelling and barn (Coleman et al. 1984: 51; see **1830-1880: Agricultural Production** and **Sociocultural Context** and **1880-1940: Agricultural Production** for summaries of the economic and sociocultural history of the farm as reconstructed from historical documents).

Archaeological investigations at the site consisted of excavating a 15% sample of the backyard along with 108 shovel test pits and 55 excavation units across the remaining portions of the property. These excavations revealed:

> the late eighteenth and early nineteenth century topography on the Hawthorn site suggests a house site situated on a hillock, sloping sharply to the west and east. From the onset of occupation, considerable erosion occurred, which rapidly filled in an existing trough-shaped basin to the west. Erosion also caused considerable amounts of soils to be deposited as slopewash to the east of the hillock. The lack of any depositional basin allowed these soils to spread out over a very large area. Through time, continued movement of slopewash to the east buried an earlier plowzone and created a new soil horizon... which was subjected to plowing in the late nineteenth and early twentieth centuries (Coleman et al. 1984: 94-95).

Distributional analysis of the material culture recovered from the excavations revealed two major high density areas. One lay north and west of the house, and consisted of late nineteenth and early twentieth century materials. Continual occupation of the area obscured any functional differences that may have existed in the use of these spaces over this period. The other concentration lay approximately 30-40' east of the house, in the side yard of the original, south-facing log house. Again spatially separate functional areas were lost through the long-term use of this area (Coleman et al. 1984: 155-156). This change in refuse disposal

patterns accompanied a clear change in the use of space, as agricultural support buildings and the activities associated with them were separated from the house and its yard in the late nineteenth century (Coleman et al. 1984: 178).

Due to the extremely fragmentary nature and mixed contexts of the material culture, little besides the distributional analysis was possible. Limited faunal analysis revealed that as at the Ferguson house, cattle, sheep, and pig teeth, head, and foot elements imply home rearing and butchering of these animals. A notable lack of butchering marks suggests carcasses were being prepared for wholesale marketing. Cuts apparently consumed by the resident families consisted of lower quality stew and soup meats. These meats were not supplemented by nondomesticate or wild meat sources however. Given the economic status of these farm owners compared to the Ferguson tenants, the comparability of their foodways is revealing. In conclusion, the authors found that the organization and use of space, architecture, and landscaping changed with changing economic conditions--ie. the reorientation toward production of meat, butter, and fruits and vegetables for the urban markets of Wilmington and Philadelphia. Traditional and conservative values regarding food consumption, use of food surplus, and purchase of personal items, at the same time, remained intact across the nineteenth and into the twentieth century (Coleman et al. 1984: 179-181).

Daniel H. Egbert Tenancy, Eagle Run near Christiana, New Castle County (Dickson II Site)

This 2-5.7 acre property on the outskirts of Christiana, overlooking Eagle Run, had held a storehouse from the eighteenth century until the 1840s. From then until 1912, Daniel Heisler Egbert owned the parcel, which then passed to George Butler and in 1919 to William Neal, Sr.. Sometime in the late 1840s Egbert constructed a tenant house on the site of the former storehouse, which Neal demolished when he acquired the property about 65 years later (Catts, Hodny, and Custer 1989: 109-112, 200). Little is known of the house's tenants. The only tenant family identified in the documentary record is that of David Walmsley, an African American laborer who appears in the 1880 census (Catts, Hodny, and Custer 1989: 217).

The frame tenant house measured 20' by 24', had a chimney on its eastern gable, and had stood on stone piers with wooden sills extending between them. The house contained two first floor rooms and an attic loft (Catts, Hodny, and Custer 1989: 213, 215). Over 18,500 artifacts came from the excavation of the structure and its immediate yard. Buttons, thimbles, pins, and other small metal objects accounted for nearly one-third of the collection. Window glass, and bottle, jar, table, and milk glass each composed another one-quarter of the assemblage. Ceramics formed only 15% of the collection.

The site's investigators conducted limited analysis of the collection, noting "[b]ecause of the size of the sample, and the temporally late nature of the assemblage, ranging from the late nineteenth through early twentieth centuries, only those artifacts or groups of note will be described in the following section" (Catts, Hodny, and Custer 1989: 173). All but nine of the 54 reconstructible ceramic vessels served in the kitchen or on the table. Whiteware and ironstone (18.5%) bowls, cups, plates, and serving dishes, pearlware (40.7%) cups, bowls, plates, and dishes decorated with edging, hand painting, sponging, mocha, and transfer printing, stoneware (14.8%) crocks and jugs, a small assortment of redware milkpans, chamberpots, canisters, and a jug, and several porcelain cups and saucers had served the Egbert's tenants (Catts, Hodny, and Custer 1989: 173-174, 177).

Recovered bottles (including 32 whole or nearly complete) had contained primarily medicines and mineral water. Several bore the marks of Wilmington druggists and bottlers (Catts, Hodny, and Custer 1989: 177). In addition, the archaeologists recovered the remains of at least 79 animals. The two cows, 7 pigs, and 2 sheep accounted for only 15% of these individuals. The elements present suggest Egbert's tenants raised these animals and butchered them in the yard. Thirteen muskrats, a deer, 2 rabbits, 2 opossums, and a squirrel, as well as 5 birds (probably chickens), 18 turtles, and 18 catfish supplemented the tenants' diet. These foodways based to a great extent on foraging have been termed "opportunistic collecting" and identified as characterizing poor tenants, especially African Americans (Catts, Hodny, and Custer 1989: 182-185).

Further support for the economic position and activities of the Egbert tenancy is offered by the almost 900 buttons found. They exhibited wide variety in material and type (Catts, Hodny, and Custer 1989: 187), suggesting one of the tenants worked as a "seamstress, or more likely, a rag picker, removing the buttons and other items, and selling the cloth" (Catts, Hodny, and Custer 1989: 217). Finally, a diverse assortment of other items, the typical debris of a late nineteenth-century household, included metal boot loops, shoe eyelets, buckles, shoe fragments, watch and clock parts, pins, combs, jewelry, beads, knives, scissors, lamp parts, marbles, ceramic toy teawares, whistles, a harmonica, toy rings, doll parts, a sharpening stone, a scythe blade fragment, an ice skate runner, and over 50 shot gun shells (Catts, Hodny, and Custer 1989: 189).

William Egbert Heisler Tenancy, Eagle Run near Christiana, New Castle County

William E. Heisler constructed a tenant house on a 7 acre parcel not far from Egbert's tenant house on Eagle Run sometime between 1851 and 1866. By the latter date, the property had been subdivided, and the tenant house stood on a 34.6 square perch lot. From then until 1887, the property passed through a series of hands. In the latter year, David Walmsley, previously Egbert's tenant, purchased the property. He was already nearing 70 years of age by then, and had a wife and six children between the ages of 6 and 24. He and his two eldest sons appear as laborers in the 1880 census. The family held the property until 1944, but by then Walmsley's remaining son had moved to Pennsylvania (Catts, Hodny, and Custer 1989: 219, 220, 224-225).

During Phase II investigations at the site, archaeologists excavated the house foundation (of mortared stone with a later concrete block addition) and cellar, which measured 15' by 55', a possible privy, portions of a large, dense, sheet midden extending down a slope across the lot's rear, a brick-lined well, and several fence postholes (Catts, Hodny, and Custer 1989: 232-244).

The sheet midden yielded most of the artifacts recovered at the site, over 21,800. These included portions of at least 285 ceramic vessels. Almost one-half of these were forms associated with food consumption. As expected, two-thirds were late nineteenth and early twentieth-century whitewares, principally plates, bowls, cups, dishes, and saucers decorated with flow blue, decaling, sponging, annular, painting, edging, and transfer-printing. Almost 10% were redware bowls, canisters, crocks, bottles, mugs, milk pans, pie pans, and chamber pots, and stoneware storage vessels and bowls formed another 10% of the collection (Catts, Hodny, and Custer 1989: 247, 249).

Medicine, liquor, and mineral water bottles occurred in numbers too, as at Egbert's tenancy across the way. A small collection of 89 identifiable animal bones included the remains of four pigs, two cows, two sheep or goats, a deer, a turtle, and an unidentifiable bird. The elements present suggest either on-site butchering of the domesticates, or acquisition from another source of low cost cuts (including heads of both pig and cow) (Catts, Hodny, and Custer 1989: 254, 256). Buttons and other personal items ended up in the sampled portions of the midden in much smaller quantities than around and beneath the foundation at Egbert's tenant house (Catts, Hodny, and Custer 1989: 258).

Robert Ferguson/Weber Homestead, Ogletown, New Castle County

One of the first nineteenth-century farmsteads explored intensively by archaeologists in Delaware was the Robert Ferguson/Weber Homestead, located about one-half mile southwest of Ogletown. At the time of the investigations, the house still stood, and was listed on the National Register of Historic Places (Coleman et al. 1983: 1). The earliest section of the house dated to the early nineteenth century. A single-pile frame structure set on a fieldstone foundation and with a full basement and interior gable end chimney, measured 21' by 16'. A lower, two story, one room deep section, 18' by 16', adjoined this. Constructed in the mid to late nineteenth century, it too featured an interior end chimney. Circa 1940 a third single story, two bay addition was constructed on the east end of the house (Coleman et al. 1983: 9; see **1830-1880: Agricultural Production** and **Sociocultural Context** and **1880-1940: Agricultural Production** for summaries of the economic and sociocultural history of the farm as reconstructed from historical documents).

Robert Ferguson acquired a 144 acre farm just outside Ogletown in 1834, on which he constructed the house between 1835 and 1837. His son managed the farm. In 1870, Ferguson sold the property, which then passed through a succession of owners over the next 110 years. Throughout the entire period the house stood, its owners resided in a house directly across the street, housing farm tenants (in some cases sons or other relatives) in the "Robert Ferguson" House (Coleman et al. 1983: 13-14).

Unlike later projects, the archaeological excavations at the Ferguson tenant house consisted mostly of shovel test pits and the excavation of select test units. This excavation methodology limited the potential comparison of the data with those from other sites excavated more extensively. As the report's authors state:

> The archaeological data base provided by excavation of the Ferguson House site proved generally unreliable for socio-economic or detailed temporal interpretation. It is apparent that the site has undergone extensive disturbance and mixing from plowing and 20th century landscaping. With the exception of Feature 6 (Test Square 18), the east yard area was found to be totally disturbed by plowing and landscaping. The north yard area contained two features and squares comprised of [sic] poorly-stratified 19th and 20th century deposits. A similar situation was encountered in the west yard, where intact structural features were located. Unfortunately, association of these features with diagnostic artifacts or materials was lacking (Coleman et al. 1983: 77).

Distributional analysis of the recovered material culture did reveal some spatial patterning. Creamware and pearlware ceramic sherds clustered just outside the back door of the house's earliest

section, while whitewares concentrated further from the house and in the east yard near the kitchen. Bottles, in contrast, clustered behind the original barn. Faunal remains, consisting of cattle, sheep, pig, chicken, turkey, and fish bones, concentrated in the yard north of the house (Coleman et al. 1983: 77, 81, 86).

A. Temple Farm Tenancy, Ogletown, New Castle County

The documents and archaeological investigations at the A. Temple site indicate it comprised an early to mid-nineteenth century, 200 acre tenant farm. Thomas Forman's 1837 tax assessment first mentions a two-story frame dwelling, subsequently depicted in twentieth-century photographs. The original house, with its stone-lined cellar, measured 20' by 26'. Forman also constructed the necessary farm and domestic outbuildings. Tax assessments from 1822 to 1845 show a steady increase in real estate value. Outbuildings identified by the archaeological work belonged to this nineteenth-century building complex. Between 1910 and the 1930s, the property's owner, Edward Richards, enlarged the house by adding a 20' by 16.4' frame addition on its western end. Richards also replaced the earlier outbuildings with those seen in the twentieth-century photographs. The complex remained a farm tenancy until 1955.

Interviews with the most recent tenants identified the twentieth-century outbuildings as consisting of two chicken houses, a pump house, two tool shed/granaries, a barn, two corn cribs, a pig pen, an outhouse, a carriage house, and a garage. Most stood over 80' south and west of the house. Although the archaeology could not verify it, these structures probably in part replaced nineteenth-century structures of similar function. By the early twentieth century, they would have needed replacement, as all the nineteenth-century structures were of post-in-the-ground, post-on-block, ground-laid sill construction, or some combination of these. The wood-lined root cellars in two of the outbuildings defined by the archaeologists possibly stored farm goods. A third outbuilding, distinguished by heavier posts supporting its north wall, possibly represents a stable with a southern exposure. Two other outbuildings have been interpreted as a wash house or cold storage shed (small, standing close to the house and well) and a wood shed. The function of the final outbuilding remains unclear. This number and diversity of outbuildings is atypical of nineteenth century tenancies supporting adjoining main farms (e.g., Grant Tenancy, Ferguson/Weber Tenancy). Absentee landlords living as far away as Philadelphia owned this farm, however, from the 1780s through 1950. It thus functioned as an independent farm operated by a farm manager, and required the full complement of ancillary structures. In fact, the farm probably housed additional structures the archaeologists did not uncover. The barn and larger outbuildings, which typically stood farther from the house, were likely located outside the project area (a road construction right-of-way).

The locations of the archaeologically-identified outbuildings, soil chemical concentrations, and artifact distributions defined the use of space and layout of the farm's nineteenth-century inner and outer active yards. The inner yard south of the house extended for a distance of approximately 30', was marked by dense artifact concentrations at this distance, and contained the wash house/cold storage shed and wood shed. To the east and west of the house, artifact densities similarly defined the edge of the inner yard at 30-40'. Beyond this yard stood the other four outbuildings and two privies. High phosphate levels characterized this outer yard, probably the result of animal penning, butchering, and organic refuse disposal. The privies stood 40' southeast of the well, and about 50' south of the house.

Differential distribution of temporally diagnostic artifacts also indicated some change in yard use over the course of the nineteenth-century. During the early years of the farm's occupation, refuse was discarded on either side of the wood shed. While this practice continued during the middle and later years of the century, the tenants also dumped their garbage further to the north and to the south, in the area of the outbuilding complex in the outer yard. A new dump was also created in the northwestern portion of the outer yard. By the twentieth century, then, household refuse concentrations formed a horseshoe ringing the house and defining the boundary between the inner and outer yards (Hoseth et al. 1990: 173-182).

Comparative studies of the Temple farm focused on house size, farm layout, and consumption. Comparing the size of the original tenant house with several owner-occupied and tenanted farm houses in northern Delaware demonstrated a "vast size difference...between the white owner-occupied houses and black owner- and tenant-occupied houses" (Hoseth et al. 1990: 189). Comparing farm layouts among the same group of sites and through the literature led the authors to conclude that "the A. Temple Site consisted of a house, smaller than an owner-occupied but larger than other tenant-occupied houses, and outbuildings, similar in number to those found on owner-occupied farms but not as diverse and substantial" (Hoseth et al. 1990: 191-192). The faunal assemblage from the Temple farm proved too small for analysis, so comparison of consumption and consumer behavior among these Delaware farmers focused on ceramics, analyzed using the difference-of-proportion test. The flatware to hollowware ratio and the tea cups to mugs and jugs ratio both proved similar among all four sites (Temple, Williams, Egbert [Dickson II], and Heisler). The Temple and Heisler sites however, contained lesser proportions of preparation/storage vessels than the Williams and Egbert [Dickson II] assemblages. These differences appear to correlate with social and economic differences (though not ones based on race/ethnicity) among these nineteenth-century farmers and laborers (Hoseth et al. 1990: 183-199).

Williams Site, Glasgow, New Castle County

The "Thomas Williams" site lay on the northern periphery of the village of Glasgow in Pencader Hundred, New Castle County. Data recovery excavations identified two houses at the one acre site. The first, occupied by tenant farmers, was built ca. 1791 and stood until 1846. The precise measurements of this first house, which documents recorded was of log construction, could not be determined. Probably constructed on ground-laid sills or on wooden blocks, it did however contain two root cellars, suggesting a hall-parlor plan with a cellar in each room. The second frame house David Ball constructed in 1845. Archaeologically, this house left the remains of a 14′ by 10′ stone cellar, perhaps added under one end of the house after it had been built. This house too appears to have stood on wooden blocks or piers, and would have measured about 17′ by 27′ and had a two-room plan. Thomas Williams, a stonemason, owned and lived in the house from 1846 until 1875, when Sidney Stump purchased it. Stump, an African American farm laborer from Maryland, lived in the house with his family (including two sons also working as farm laborers) until his death in 1922 (Catts and Custer 1990: 210-216; see also **1830-1880: Sociocultural Context**).

"By combining the architectural data, artifact frequencies, and soil analyses results, a picture of temporal yard usage and proxemics for the Williams Site occupants emerges" [Williams-Stump house] (Catts and Custer 1990: 218). Fencelines and trees marked the boundaries of the inner active yard, which measured about 50′ by 60′, and thus covered 3000 square feet. The well stood off the northeast corner of the house, just northwest of a small outbuilding, possibly for cold storage. Soil phosphate levels and concentrations of household refuse suggest this area formed the core locale of outdoor household activities. South of this outbuilding, and thus east and southeast of the house, the Williams and/or Stump families apparently kept a garden, perhaps with a shed in one corner. Beyond the fencelines, in the outer yard, four privies were found in the northwestern corner of the site, three more directly west of the house, and one south of the garden. All lay between 25 and 30′ from the house. A second outbuilding stood south of the house, just beyond the fence, between it and the privy (Catts and Custer 1990: 219-223).

The Williams site produced by far the largest and most diverse material culture assemblage of all those New Castle and Kent county farms, farm tenancies, and farm laborers' residences discussed here. Over 35,000 artifacts and over 101,000 brick fragments were recovered from the 25% plowzone sampling alone. Almost 18,000 were ceramic sherds, mostly redware, whiteware, ironstone, and pearlware. The 12,000 glass sherds represented bottles, jars, and window panes. Two thousand nails also remained from demolition of the structures. In addition, the plowzone excavations produced a diverse assemblage of buttons, smoking pipe fragments, cow, pig,

cat, and bird bones, shells, seeds, shutter dogs, ceramic door knob parts, hinges, and latches, bolts, locks, and keys, "thimbles, straight pins, safety pins, tin can parts, zinc jar lids, glass beads, copper and glass jewelry, a man's wedding band, suspender clips and rivets, a clock key, an eyeglass lens and a metal eyeglass arm part, doll parts, marbles, textiles (leather and cloth, mostly shoe parts), oil lamp parts and glass, shotgun shells, tablespoons and knives, grommets, combs, push pins, and horseshoes," a lead seal, coins, and a stonemason's points (Catts and Custer 1990: 148-149).

An additional substantial assemblage was recovered from excavation of the houses' cellars and the well. The cellar of the earlier house, filled during the late 1840s, contained fragments of a minimum of 174 ceramic vessels. One-fourth were redware milk pans, bowls, jugs, and other utilitarian forms; one-half were pearlware plates, bowls, cups, and saucers decorated with edging, transfer printing, and painting; the remainder consisted of an assortment of creamware, porcelain, whiteware, yellowware, and tin-glazed earthenware vessels (Catts and Custer 1990: 155, 157). Small amounts of bottle glass, 200 animal bones, fish bones, and oyster shells, along with nails and a small collection of other objects completed the assemblage (Catts and Custer 1990: 157, 159-160).

Just over 200 reconstructible ceramic vessels came from the later house's cellar. Of these, one-third were pearlware, over one-fourth whiteware and ironstone, almost one-fourth redware, and the remainder creamware, porcelain, yellowware, and Rockingham. Vessel forms differed little from those in the assemblage from the earlier cellar. In contrast, 20 complete bottles were also found, along with zinc jar lids, flask tops, and a few fragments of table glass and eating utensils. In addition, much architectural debris was dumped in the cellar when the house was demolished. Finally, this cellar also yielded a fascinating collection of other items from the Stump family, including lamp glass fragments, metal furniture parts, buttons, straight pins, hat pins, safety pins, tooth brush handle fragments, purse clasps, ice skate blades, slate pencils, doll parts, marbles, buckles, shoe eyelets, coins, a copper badge, coiled barbed wire, a whetstone, barrel bands, horse bridle parts, chain links, and iron spring parts (Catts and Custer 1990: 167, 169).

Fragments from just over 100 ceramics vessels were recovered from excavation of the well. Forty percent of these were "transfer-printed, handpainted, shell-edged, and embossed plates, cups and bowls" (Catts and Custer 1990: 172). Another one-third were whiteware and ironstone vessels, including several "Gaudy Dutch" handpainted vessels; almost one-fourth were redware; and the remainder porcelain, creamware, stoneware, and yellowware. A few bottles, metal roofing fragments, nails, door hinge fragments, and window glass were also found. As in the later house cellar fill,

however, the most varied objects recovered from the well consisted of the horseshoes, chain links, can parts, copper wire, toys, pins, buckles, bottle tops, furniture hardware, files, sifter fragments, buttons, leather, tobacco smoking pipe fragments, worked stone, stonemason's points, and animal bones (Catts and Custer 1990: 175). Pigs, cows, sheep, cats, several species of birds, turkeys, geese, rabbits, rats, muskrats, oppossum, raccoons, squirrels, turtles, fox, and catfish were all present. The domestic species were represented by poorer quality cuts, and the Stump family clearly supplemented their diet with wild fauna to a significant extent (Catts and Custer 1990: 178-180).

Comparative analysis of these impressive materials and the architectural and landscape data yielded important conclusions.

> There is a tremendous range of variability in the archaeological remains at sites that would historically be considered as "poor" tenant sites. If there was a "middle class" in early-nineteenth century Delaware, then the occupants of the Williams Site, the Whitten Road Site, and the Allen House seem to fall in this category. Two of these sites, Williams and Whitten Road, were the homes of farm tenants, and the Allen House was the dwelling of an artisan... [A]ll of these sites and occupants are "smallholders"... Their material remains, including dietary remains and consumption patterns, are remarkably the same, especially given the supposed historical differences between these sites...
>
> The most obvious discrepancy in the material worlds of the sites compared with the [1791-1846] [t]enant [o]ccupation of the Williams Site is in the architectural remains at each of the sites, suggesting that the highly visible, built environment was significant in displaying social and economic position. The lack of substantial outbuildings at the [t]enant occupation of the Williams Site and at other tenant farmer sites in New Castle County (cf., Ferguson House), support the reliability of this contention...
>
> Rather than representing a monolithic image of the oppressed black, the historical archaeological investigations of the Williams, [Egbert] Dickson II, and Heisler Tenancy sites in New Castle County have shown that there is a tremendous amount of variation in the housing, site layout, diet, and consumption patterns of the black community in the second half of the nineteenth century.... These differences are no doubt due to a number of factors: the relative statuses of the site occupants within the black community, the age of the sites and of the archaeological deposits, lengths of occupation, personal preferences, and...different educational levels...

...The significant thing that can be gathered from the comparisons presented here of the Thomas Williams Site with other black-occupied sites in Delaware is that despite their inferior social, political, and economic positions within Delaware's society, the material remains of rural blacks in Delaware suggest that there was a richness and variety in housing and material wealth between and among the members of the black community. Delaware blacks seem to have been part of the consumer society, as witnessed by the tremendous range and variety of artifacts recovered archaeologically, notwithstanding their ascribed second-class status...(Catts and Custer 1990: 258-262).

John Darrach Store and Tenancy, Duck Creek Hundred, Kent County

Constructed before the Revolution by John Darrach's father-in-law William White, Darrach operated the Store along the road to the Duck Creek Landing, in Duck Creek Hundred, Kent County, between 1778 and his death in 1805. In addition, he rented a portion of the Store as a residence, probably for a time in the later eighteenth century to the local miller. Between 1803 and 1806, Darrach or his heirs converted the Store to a tenant residence. From then until its demolition in the late 1860s, the Store housed mostly unidentified tenants probably working in farming or laboring in maritime trades. Archival research, excavation of a 25% plowzone sample and of almost 240 features within the one-acre site area, analysis, and comparison constituted the data recovery investigations of the site.

Four research themes guided the historical and archaeological investigations of the Store: The Social and Economic Context of Family and Mercantile Activity in the Smyrna/Duck Creek Hundred Community; The Evolution of Architecture and Landscape; Tenancy; and Agricultural Crisis and Reform, 1790-1840. The latter three are relevant in this context.

The Darrach Store site's archaeological record preserved a case study of the evolution of architecture and landscape in Duck Creek between the second half of the eighteenth century and the Civil War. When William White constructed his brick store, brick structures were truly a rarity in central Delaware, and a visible sign of success and permanence. By the early nineteenth century, its owner had replaced the Store with a new one in town. The old Store property was remodeled for tenants, an addition constructed on its eastern end, new outbuildings erected, and the domestic yard enlarged, reorganized, and enclosed by fences. These latter separated outdoor work areas, storage and work spaces around the outbuildings, gardens, livestock pens, and waste disposal areas in the form of a large midden and privies. This intermediate landscape of the early nineteenth century seemingly expressed changing perceptions of the division of property and property

rights soon codified through the agricultural reformers' efforts. Later tenants changed the property little, until new owners in the 1860s reworked the landscape once again, plowing under and planting over all vestiges of the buildings, work yards, gardens, and dumps.

The lives of the Store's tenants were also documented in the archaeological record, especially the domestic economic strategy of the later occupants, in residence after the Store's conversion to a tenancy. Multifunctional redwares predominated in the kitchen and on the table. Supplementing these wares at meals, at tea, and on display in the cupboard were a few creamware and pearlware plates, and creamware, pearlware, and porcelain teawares. The faunal remains indicate these families served on their earthenware plates and bowls beef, pork, mutton, and chicken, as well as geese and other water fowl, muskrat, opposum, squirrel, rabbit, and locally harvested oysters. All could have been raised, hunted, or harvested by the tenants themselves, or purchased at a store in town, or acquired from a neighboring farmer or waterman. Moreover, all the faunal taxa represented archaeologically served multiple roles in the local economy, as food sources for local consumption and for exchange, and as sources of fur, hides, wool, and feathers. Although many questions remain concerning the lives of the Darrach Store's tenants, they clearly sought the most out of their investment, whether of time, energy, or money.

Finally, this study of the Darrach Store has contributed information on the agricultural crisis and subsequent reform efforts in Delaware between ca. 1790 and 1840. John Darrach clearly took advantage of the opportunities the international economy of the early federal period offered, and profited handsomely. Later, when prices hit bottom, wealthy merchants like the one who leased the Store in the early nineteenth century, amassed control over incredible landholdings. They then set about rebuilding--the economy, the land, and the social relations linking the two. As for their tenants, they placed a premium on resourcefulness, and thus survived. Fortunately, they lived in an area rich in natural resources, despite human efforts to wear out the land.

W. Eager Farm, near Dover, Kent County

This small tenant- and owner-occupied farm along Muddy Branch north of Dover, in Kent County, dates from ca. 1851 to ca. 1896. The 144 acre farm housed first tenant farmers, then its owners, the William Eager family, from 1866 to 1877, and then another series of tenant farmers (Grettler et al. 1991: 69). In 1860, George M. Jewell tenanted the farm, which consisted of a "frame house, barn, stable, crib and c." Most of the 144 acre farm had been improved and by 1860, only 59 acres remained wooded and unimproved (Grettler et al. 1991: 75). Jewell shared the house with his wife, four children, a farm laborer, and a young girl. Tax assessors valued the farm at $2,880, placing it in the lower quarter of farm

valuations in Dover Hundred. In 1870, William Eager, his wife, two sons, and a hired hand worked a small farm of 74 improved acres. He owned a horse, two mules, two milk cows, and three hogs, and raised Indian corn, winter wheat, buckwheat, beans, peas, and Irish potatoes. In addition, his farm produced molasses, honey, and butter in salable quantities. Over the 11 years of his ownership, Eager divided the farm into three parcels, finally selling the 73 acre parcel containing the house and outbuildings in 1877 (Grettler et al. 1991: 76-77).

Artifact densities suggested the location of the house along the Dover to Leipsic Road, as no evidence of a foundation was found. They also revealed two refuse concentrations behind the house, both beyond the fencelines which bordered at least two sides of the inner yard. In addition to these middens, a series of small, shallow trash pits were found aligned along the fencelines. A "hogshead" or barrel-lined well was the only other cultural feature found in the yard, just southeast of the house (Grettler et al. 1991: 86-98). Soil chemical analysis yielded additional information on the layout and use of the area in the immediate vicinity of the farmhouse. Phosphates proved especially informative, identifying the outer yard, beyond the fences, and principally to the west of the house, as the primary location of the animal pens (Grettler et al. 1991: 112). Potassium concentrations identified this also as the main dumping place for fireplace or stove ashes. Finally, concentrations of calcium from lime mortar supported the interpretation of the house's placement on the lot (Grettler et al. 1991: 123).

The excavations produced just under 7,000 artifacts. Over half of these were ceramics, mostly undecorated whitewares. Another one-fourth of the assemblage consisted of nails, window glass, plaster, and other architectural materials. Bottle glass, faunal remains, and a small assortment of other domestic items completed the collection. Faunal remains proved too few to support analysis (Grettler et al. 1991: 124-125).

As evident in the foregoing, reported historical archaeological research on nineteenth and early twentieth-century New Castle and Kent county farms, farm tenancies, and homes of farm laborers has produced a series of more or less detailed, textured case studies. In many cases, the researchers have also placed the sites and their occupants into a local and even regional context. Comparison has typically focused on individual characteristics, such as house size, yard layout, diet (at least meats), and ceramic consumption patterns. Nevertheless, these have suggested important similarities and differences, continuities and changes over time and between farm workers and owners of different cultural backgrounds and economic positions. Further comparisons are clearly warranted, and Grettler et al. (1991: 139-147) suggest some directions these might take, focusing on the Eager farm. Synthesis and higher level comparisons, of farm families and their

communities, also remain for future researchers. Sufficient data to begin to develop such higher order interpretations are now becoming available. In addition to the sites discussed here, several more have been excavated and are currently being analyzed and site reports prepared.

Grettler has made a preliminary effort to outline one direction a synthesis might take--the exploration of agricultural reform in Delaware from an archaeological perspective (Grettler 1991). He wrote, "The study of agricultural reform links the archaeological record with regional social and economic change" (Grettler 1991: 1). He cites the reform literature as contrasting the "improved" farm with its "neatness" and "order", its "pure-bred livestock", "stylish houses, gardens, and yards", excavated trash pits, "paling and post-and-rail fences", "labor-saving machinery", and "specially designed outbuildings" with the "half-starved livestock, dilapidated or nonexistent fences, heaps of trash, and rampaging swine", and few or nonexistent farm outbuildings of the unreformed (Grettler 1991: 5-6). The research outlined above and Grettler's own review of this literature clearly indicate the archaeological record preserves evidence of agricultural reform's impact on individual farmers and of the individual decisions they made about how to operate their farms. Section VII. **Archaeological Research Questions**, offers additional research topics on agriculture and farm life in New Castle and Kent counties, 1830-1940, which would especially benefit from an archaeological perspective.